Abstract of the Disclosure

In a GPRS core network, MPLS-based Label Switched Paths (LSPs) between Serving GPRS Support Nodes (SGSN) and Gateway GPRS Support Nodes (GGSN) are established for different types of traffic across the core network during a traffic engineering phase. The queuing and forwarding treatment offered to packets at internal nodes along these routes are based on DiffServ per-hop behavior (PHB) groups to which each packet is assigned at the edge of the core network, i.e., at SGSN or GGSN. In one embodiment of the invention, PDP messaging that occurs at the time of activation of PDP context can be used to assign the corresponding packet stream to particular LSP and PHB. When an MS changes serving SGSN due to mobility, it is only required to change the label mapping context at a GGSN, thereby allowing subsequent packets targeted to the MS to be routed to new SGSN.